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Grain Transportation Prospects

USDA/STB Grain Logistics Task Force



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The Grain Transportation Prospects is a product of the Department of Agriculture (USDA) and Surface Transportation Board (STB) Grain Logistics Task Force (GLTF). The members of the GLTF working group are: Gerald A. Bange, Chairperson, World Agricultural Outlook Board, USDA; Melvin F. Clemens, Jr., Surface Transportation Board; Steve P. Gill, Farm Service Agency, USDA; Mack N. Leath, Economic Research Service, USDA; Brian D. McKee, Grain Inspection, Packers and Stockyards Administration, USDA; Jerry D. Norton, Agricultural Marketing Service, USDA; Robert Riemenschneider, Foreign Agricultural Service, USDA; Jim Schaub, Office of Chief Economist, USDA; and Frederic A. Vogel, National Agricultural Statistics Service, USDA.

Summary

Despite projected reductions in the 1999/2000 wheat and corn crops, a forecast record soybean crop and larger beginning stocks are expected to push U.S. grain (excluding rice) and soybean supplies to their highest levels since 1987/88. The U.S. Department of Agriculture's (USDA) August projections for the 1999/2000 corn, sorghum, barley, oat, wheat, rye, and soybean crops put this year's grain and soybean production at 15,787 million bushels, down 2 percent from 1998/99, but still the third largest production ever. With beginning year stocks up a projected 35 percent, grain and soybean supplies for 1999/2000 are expected to total 19,382 million bushels, up 3 percent from 1998/99.

At the levels currently projected for 1999/2000 grain and soybean supplies, storage capacity will be extremely tight this fall. Beginning stocks in every region of the country, except the West, are expected to be at or above their 1998/99 levels and well above the 5-year averages. Production is expected to be at or exceed the 5-year averages in all the major producing regions. These large supplies will cause storage and handling problems at harvest and through the first few months that follow.

August projections for 1999/2000 combined beginning stocks and production fall just 7 million bushels short of total U.S. grain storage capacity as reported for December 1, 1998. Beginning stocks and production for 1998/99 were 318 million bushels short of December 1, 1997, total storage capacity. The storage situation will be especially tight in the major corn-producing regions. Fall grain and soybean supplies are expected to exceed storage capacity for the second straight year in the Eastern and Western Corn Belts and for the third straight year in the Central Plains. In the Eastern Corn Belt, beginning stocks and production for 1999/2000 are projected to exceed storage capacity by 291 million bushels, or 6 percent. In the Western Corn Belt, beginning stocks and production are projected to exceed storage capacity by 284 million bushels, or 6 percent. Central Plains beginning stocks and production are projected to exceed storage capacity by 375 million bushels, or 12 percent.

Grain and soybean use for 1999/2000 is projected at a record 15,788 million bushels, up 2 percent from 1998/99. Increased use is expected because of strong domestic milling and processing demand and higher exports. Exports of grain and soybeans since January have been running well ahead of year-ago levels, with some of the largest increases coming in the last few

months. This has consistently pushed barge shipments above year-ago levels on the Mississippi River system since the beginning of the spring navigation season.

Barge grain shipments have shown strong year-to-year increases in volume. Starting in July and through early August, average weekly grain and oilseed shipments were up 33 percent from the third quarter 1998 average and up 30 percent from the 5-year average. At this pace, annual barge movements for 1999 could approach levels that have not been reached since 1995.

Lock repairs on the Mississippi River, however, may slow barge shipments during the next few weeks. In late July, Locks and Dam (L&D) No. 27, the last lock on the Mississippi River, had its main chamber closed for about a week for the replacement of lift gate chains. On August 6, the main chamber at Melvin Price (MP) L&D, located in Alton, IL (about 15 miles upstream from L&D 27), was closed to repair damages caused by a tow accident. Repairs are expected to take about a month. Traffic, although slowed, will continue to move through the smaller 600-foot auxiliary chamber at MP during the repairs. As of mid-August, the MP repair work was reported to be on schedule.

Spot barge rates on the upper portions of the Mississippi River reflect this year's stronger demand for corn and soybeans. Rates from Minneapolis-St. Paul, MN, to Mississippi River Gulf ports during the first weeks of the third quarter (July-September) averaged 283 percent of tariff, 17 percent higher than third quarter 1998 rates and 30 percent higher than the 5-year average for third quarter rates. Barge rates for grain shipped from St. Louis, MO, to the Gulf, however, are down 18 percent from third quarter 1998 and at the 5-year average. Third quarter 1998 barge rates at St. Louis were unusually high because of increased demand for upbound movements of nongrain commodities.

Barge rates typically peak for the year in September and October, then decrease markedly during November. September barge rates are being quoted at 316 and 226 percent of tariff for Minneapolis-St. Paul and St. Louis, respectively. Rates for November are being quoted at 311 percent of tariff for Minneapolis-St. Paul and 170 percent of tariff for St. Louis. The very small drop in November, compared to September rates for Minneapolis-St. Paul, is an indication that grain shippers expect continued strong demand for barge capacity on the Upper Mississippi River even in the final weeks before the winter closing.

Rail shipments have also been up since earlier in the year, driven by higher wheat exports, particularly at the Texas Gulf, and because of changes in the ocean freight rate spread between the Gulf and Pacific Northwest (PNW). The ocean freight rate spread between the two key grain routes, U.S. Gulf to Japan and PNW to Japan, widened to \$7.22 per metric ton during July and August 1999. The spread is up 17 percent from second quarter 1999 and more than double the spread in third quarter 1998. The larger spread between Gulf and PNW rates makes PNW ports more attractive for exporters who source corn by rail from the western corn-producing areas.

High demand for grain exports, particularly corn, is increasing traffic volumes on the western railroads. Burlington Northern Santa Fe (BNSF) is originating large volumes of grain in the Dakotas and Minnesota, most of which is probably bound for the PNW and the Asian export markets.

Weekly grain shipments on the eastern railroads continue to keep pace with year-ago levels; however, operating problems associated with the Conrail

takeover persist and have increased the volatility of eastern grain traffic in recent weeks. The logistical problems faced by grain receivers in the East should ease in the weeks ahead. August and early September are typically the slowest months for grain traffic on the eastern railroads as feeders in the Southeast have local wheat and corn available to augment rail-delivered Eastern Corn Belt supplies. This slack period should allow both CSX Transportation and Norfolk Southern to smooth out operating problems and increase system fluidity. This will help position them for the busy fall shipping season, which begins in late September with the Eastern Corn Belt harvest.

This report is compiled by USDA's Agricultural Marketing Service. It contains information provided by the Surface Transportation Board and by USDA's Agricultural Marketing Service, Economic Research Service, Farm Service Agency, Foreign Agricultural Service, and National Agricultural Statistics Service. It is approved for release by the World Agricultural Outlook Board. For questions concerning this report, contact Jerry D. Norton, USDA-Agricultural Marketing Service, 202-690-1303, "jerry.norton@usda.gov". Unless otherwise referenced, information in the report is based on data from the August 12, 1999, *World Supply and Demand Estimates* and *Crop Production* reports.

Grain Market Situation

Grain and Soybeans

Expected reductions in the 1999/2000 wheat and corn crops will not be sufficient to offset a forecast record soybean crop and larger beginning stocks of grain (excluding rice) and soybeans, leaving total supplies for 1999/2000 at their highest level since 1987/88. Grain and soybean use for 1999/2000 is also projected to set a new record, driven by strong domestic milling and processing demand and higher exports. Exports of grain and soybeans since January have been running well ahead of year-ago levels, with some of the largest year-to-year increases coming in the last few months. Higher exports of corn and soybeans have consistently pushed barge shipments above year-ago levels on the Mississippi River system since the beginning of the spring navigation season. Rail shipments have also been up since earlier in the year, driven by higher wheat exports, particularly at the Texas Gulf, and because of changes in the ocean freight rate spread between the Gulf and Pacific Northwest (PNW). Increases in ocean freight rates from the Gulf to the Far East have widened the spread between Gulf and PNW rates, making PNW ports more attractive for exporters who source their corn by rail from the western corn-producing areas. Despite projected record use, large supplies will put a great deal of pressure on the storage and handling system, particularly at harvest. Fall grain and soybean supplies are expected to exceed storage capacity for the second straight year in the Eastern and Western Corn Belts and for the third straight year in the Central Plains.

Supplies. The U.S. Department of Agriculture's (USDA) August projections for the 1999/2000 corn, sorghum, barley, oat, wheat, rye, and soybean crops put this year's grain (excluding rice) and soybean production at 15,787 million bushels, down 2 percent from 1998/99 but the third largest production ever. Beginning year stocks are projected up 35 percent at 3,337 million bushels. This would represent the largest carry-in since 1993/94. With imports projected at 257 million bushels, down 4 percent from 1998/99, available grain and soybean supplies for 1999/2000 are expected to total 19,382 million bushels, up 3 percent from 1998/99 and the highest since 1987/88. Ending stocks for 1999/2000 are projected up 8 percent at 3,594 million bushels. At this level, 1999/2000 ending stocks will be the largest since 1987/88 and the fourth straight year in which carryout has increased.

Based on the August *Crop Production* report, combined grain and soybean production for 1999/2000 is forecast to be down 333 million bushels from 1998/99.

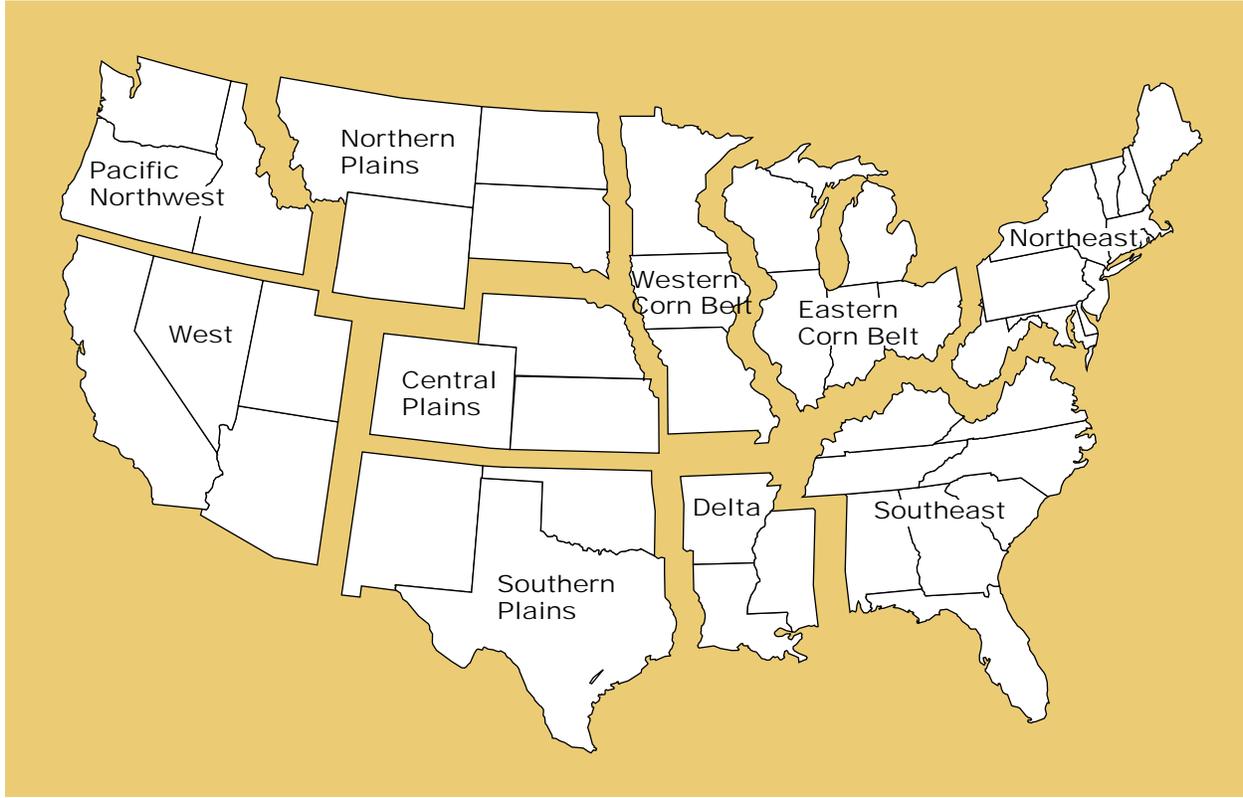
Most of this reduction is the result of decreases in the Central and Northern Plains, where production is expected to be down 160 and 155 million bushels, respectively (figure 1, table 1). These decreases represent a 5-percent reduction in Central Plains production from 1998/99 and a 10-percent reduction in the Northern Plains. Reduced wheat production in the PNW is expected to reduce that region's 1999/2000 grain and soybean crop by 14 percent, or 64 million bushels. Northeast production is forecast to be down 73 million bushels, or 20 percent, from 1998/99 as the result of dry, hot weather. Grain and soybean production in the Corn Belt is also expected to be down modestly for 1999/2000. The Eastern Corn Belt crop is forecast down 31 million bushels, or 1 percent, and the Western Corn Belt crop is forecast down 12 million bushels, or less than 1 percent. The biggest increase in combined grain and soybean production is expected in the Southern Plains, where 1999/2000 production is forecast up 103 million bushels, or 14 percent. Production in the Delta and Southeast is also forecast up 44 and 23 million bushels, respectively. This represents increases of 13 and 4 percent for the respective regions.

Use. August projections put grain and soybean use for 1999/2000 at a record 15,788 million bushels, up 2 percent from 1998/99. Domestic use for 1999/2000 is projected at 11,566 million bushels, up 44 million bushels from the previous record in 1998/99. Higher domestic use projections reflect expected increases in milling and processing use in 1999/2000. Feed and residual use for 1999/2000, however, is projected down 2 percent at 6,584 million bushels. Export use for 1999/2000 is projected up 5 percent from 1998/99. At 4,222 million bushels, 1999/2000 exports would be the highest since 1995/96.

Projections of higher grain and soybean exports in 1999/2000 are consistent with the strength of export demand over the past several months. Since January, grain and soybean export inspections have been up 25 percent over year-ago levels. For the most recently reported period, June-July, inspections were up 44 percent over the same 2 months in 1998. Outstanding export sales (sold but unshipped) for corn for the current and next marketing year continue to run well ahead of their levels last year at this time. This suggests that transportation demand for export shipments will remain strong in coming months.

World Trade. World wheat production is forecast to be 576 million metric tons (mt), down 12 million from the previous year. Global wheat trade in 1999/2000 is pro-

Figure 1—U.S. grain production regions



Source: USDA-AMS

Table 1—U.S. grain and soybean production, 1994/95-1999/2000

Region	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	Percent of 1998/99	Percent of 5-yr. avg.
	<i>Million bushels</i>							
Northeast	375	326	394	341	361	288	80	80
Southeast	795	642	770	703	584	607	104	87
Delta	360	290	475	403	338	382	113	102
Eastern Corn Belt	4,998	3,804	4,034	4,493	4,614	4,583	99	104
Western Corn Belt	4,200	3,304	3,981	3,934	4,264	4,252	100	108
Southern Plains	692	597	649	828	717	820	114	118
Central Plains	2,745	2,078	2,767	2,898	3,087	2,927	95	108
Northern Plains	1,448	1,154	1,522	1,325	1,557	1,402	90	100
Pacific Northwest	405	441	497	478	459	395	86	87
West	128	110	150	143	139	132	95	99
United States	16,147	12,746	15,240	15,546	16,120	15,787	98	104

Note: 1999 production forecast is from the August 12, 1999, *Crop Production* report.

Source: USDA-NASS

jected at 100 million mt, relatively unchanged from the 1998/99 level. Global consumption is expected to be nearly 3 million mt below the previous year and for the second consecutive year, is projected to exceed production.

World coarse grain production in 1999/2000 is projected at 872 million mt, down almost 5 million mt from the 1998/99 level, while consumption is forecast up 3.4 million mt to 873 million mt. Global trade in 1999/2000 is projected nearly the same as this year at 93 million mt.

World oilseed production for 1999/2000 is projected at a record 298.5 million mt, up 6.9 million mt from 1998/99. Global trade and use for oilseeds and oilseed products for 1999/2000 reflect generally strong consumption growth for both protein meals and vegetable oils but only modest growth in trade.

Stocks and Storage. At the current levels projected for 1999/2000 grain and soybean beginning stocks and production, storage capacity will be extremely tight this fall. Beginning stocks in every region of the country, except the West, are expected to be at or above their 1998/99 levels and well above the 5-year averages (table 2). Production is also expected to be at or exceed the 5-year averages in all the major producing regions. These large supplies will cause storage and handling problems at harvest and in the first few months that follow.¹

U.S. grain storage capacity, as of December 1, 1998, totaled 19,131 million bushels, just 7 million bushels higher than the August projections for 1999/2000 beginning stocks and production. Together, beginning stocks and production are projected at 19,124 million bushels (table 3).² For 1998/99, beginning stocks and production totaled 18,593 million bushels, 318 million bushels short of total storage capacity reported as of December 1, 1997. Using the same measures regionally—grain and soybean beginning stocks plus production and December 1 storage capacity for the preceding year—the storage situation will be even more serious in the Eastern and Western Corn Belts and in the Central Plains (table 4).

In the Eastern Corn Belt, beginning stocks and production for 1999/2000 are expected to exceed December 1, 1998, storage capacity by 291 million bushels, or 6 percent. This compares with 1998/99, when beginning

¹ Anecdotal information suggests that additional storage capacity has been constructed in 1999, but this new capacity will not show up in USDA statistics until December 1, 1999, when storage capacity is reported. Additions to capacity during 1998 added only 1 percent, or 220 million bushels of capacity.

² Beginning year stocks plus production provide an indication of the likely harvest-time pressure on grain handling and storage capacity. This measure, however, should not be taken to suggest that the combined volume of beginning stocks and production is available at any one time in the marketing year. The marketing year for the small grains crops (wheat, barley, oats, and rye) begins June 1, and the marketing year for the fall row-crops (corn, soybeans, and sorghum) begins September 1.

Table 2—U.S. grain and soybean beginning year stocks, 1994/95-1999/2000

Region	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	Percent of 1998/99	Percent of 5-yr. avg.
	<i>Million bushels</i>							
Northeast	28	38	20	33	36	47	128	150
Southeast	38	43	24	32	44	45	100	123
Delta	14	13	12	10	22	27	121	190
Eastern Corn Belt	435	641	279	313	561	807	144	181
Western Corn Belt	512	971	300	504	692	975	141	164
Southern Plains	73	74	52	47	93	160	172	236
Central Plains	309	390	163	287	450	609	135	190
Northern Plains	328	341	174	298	339	420	124	142
Pacific Northwest	107	77	78	87	124	125	101	132
West	18	14	13	14	22	7	30	41
Unallocated	59	83	56	59	90	117	131	169
United States	1,921	2,685	1,171	1,683	2,473	3,337	135	168

Note: Beginning year stocks for wheat, barley, oats, and rye are as of June 1. Beginning year stocks for corn, sorghum, and soybeans are as of September 1. The 1999/2000 beginning year stocks for the September 1 crops are based on projections from the August 12, 1999, *World Agricultural Supply and Demand Estimates*. Regional dispositions for projected 1999/2000 corn, sorghum, and soybean beginning stocks are estimated based on the June 1 regional distribution of stocks reported in the June 30, 1999, *Grain Stocks*.

Source: USDA-NASS

Table 3—U.S. grain storage capacity, December 1, 1993-98

Region	1993	1994	1995	1996	1997	1998	Percent of 1997	Percent of 5-yr. avg.
	<i>Million bushels</i>							
Northeast	431	399	394	377	378	375	99	95
Southeast	936	915	883	865	841	823	98	93
Delta	564	559	540	531	532	549	103	101
Eastern Corn Belt	5,129	5,115	5,025	4,988	4,986	5,099	102	101
Western Corn Belt	5,143	5,062	5,003	4,891	4,895	4,943	101	99
Southern Plains	1,439	1,368	1,319	1,177	1,098	1,053	96	82
Central Plains	3,214	3,267	3,196	3,134	3,102	3,161	102	99
Northern Plains	2,112	2,091	2,033	2,033	2,015	2,070	103	101
Pacific Northwest	661	645	652	636	633	630	100	98
West	152	142	140	139	140	137	98	96
Unallocated	331	311	281	271	291	291	100	98
United States	20,112	19,874	19,466	19,042	18,911	19,131	101	98

Source: USDA-NASS

Table 4—U.S. grain and soybean supplies (beginning stocks + production) as a percentage of storage capacity, 1992/93-1999/2000

Region	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000
	<i>Percent</i>							
Northeast	87	79	94	91	105	99	105	89
Southeast	89	64	89	75	90	85	75	79
Delta	69	54	66	54	90	78	68	74
Eastern Corn Belt	100	91	106	87	86	96	104	106
Western Corn Belt	88	62	92	84	86	91	101	106
Southern Plains	63	55	53	49	53	74	74	93
Central Plains	83	78	95	76	92	102	114	112
Northern Plains	82	72	84	72	83	80	94	88
Pacific Northwest	66	84	78	80	88	89	92	82
West	78	83	96	87	116	113	115	101
United States	85	73	90	78	84	90	98	100

Note: Storage capacity is based on on-farm and off-farm capacity as of December 1 the preceding year. The marketing year for wheat, barley, oats, and rye begins June 1. The marketing year for corn soybeans, and sorghum begins September 1. Beginning stocks for the September 1 crops are based on projections from the August 12, 1999, *World Agricultural Supply and Demand Estimates*. Regional dispositions for projected 1999/2000 corn, sorghum, and soybeans are estimated based on the June 1 regional distribution of stocks reported in the June 30, 1999, *Grain Stocks*. Production forecasts for 1999/2000 are from the August 12, 1999, *Crop Production* report.

Source: USDA-NASS, USDA-WAOB

stocks and production exceeded storage capacity by 189 million bushels, or 4 percent. If the current projections are realized, this would be the worst storage shortfall in the Eastern Corn Belt since 1994/95, when beginning stocks and production exceeded storage capacity by 304 million bushels (figure 2).

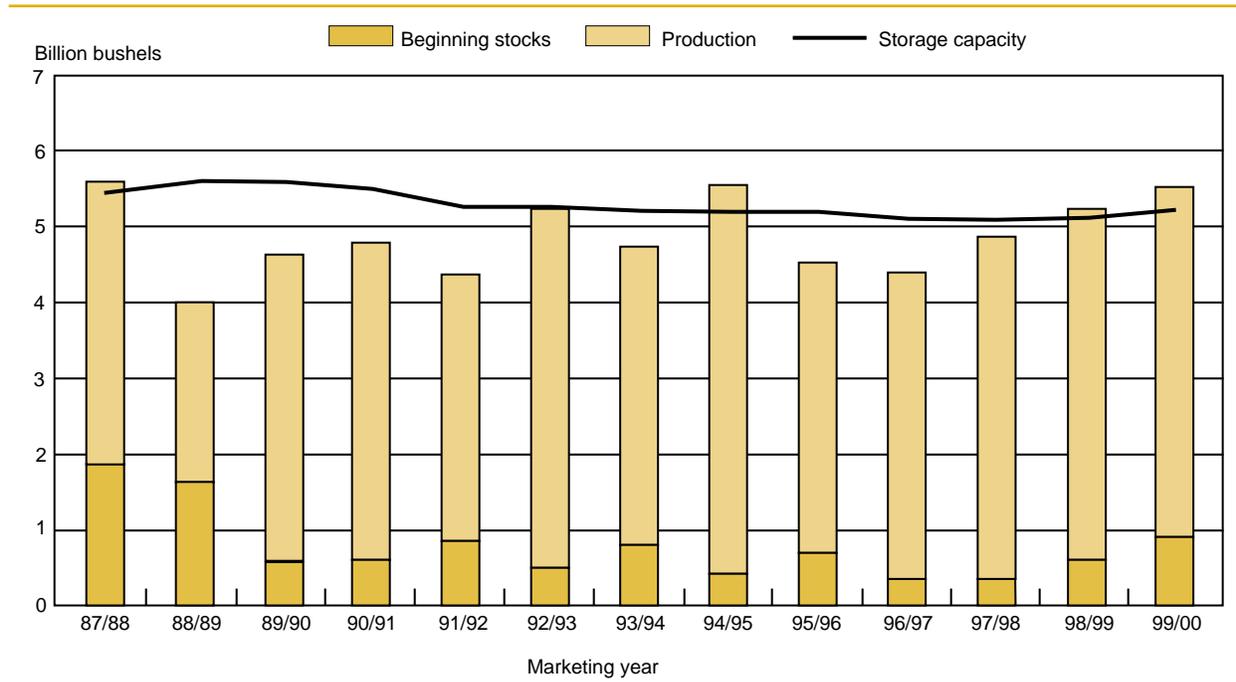
The storage situation in the Western Corn Belt is just as tight. Beginning stocks and production are projected to exceed storage capacity by 284 million bushels, or 6 percent, for 1999/2000. If current projections are realized, this would be the worst storage situation ever in the Western Corn Belt. In 1998/99, beginning stocks and production exceeded storage capacity by 61 million bushels, or 1 percent (figure 3).

Beginning stocks and production in the Central Plains are projected to exceed storage capacity for the third straight year. Central Plains beginning stocks and pro-

duction for 1999/2000 are projected to exceed storage capacity by 375 million bushels, or 12 percent. In 1998/99, beginning stocks and production exceeded storage capacity by 435 million bushels, or 14 percent. In 1997/98, when service problems on the Union Pacific (UP) slowed grain shipments throughout the Western United States, beginning stocks and production also exceeded the region's available storage capacity by 50 million bushels, or 2 percent (figure 4). Kansas and Nebraska shippers were among the hardest hit by the rail service problems in the fall of 1997.

The Northern Plains was also affected by the western railroad service problems in 1997. Storage capacity, as measured against beginning stocks and production, would appear to be adequate in the Northern Plains this fall (figure 5). Of course the corn-producing areas in the eastern Northern Plains are likely to experience the same types of storage problems as the Western Corn Belt and Central Plains.

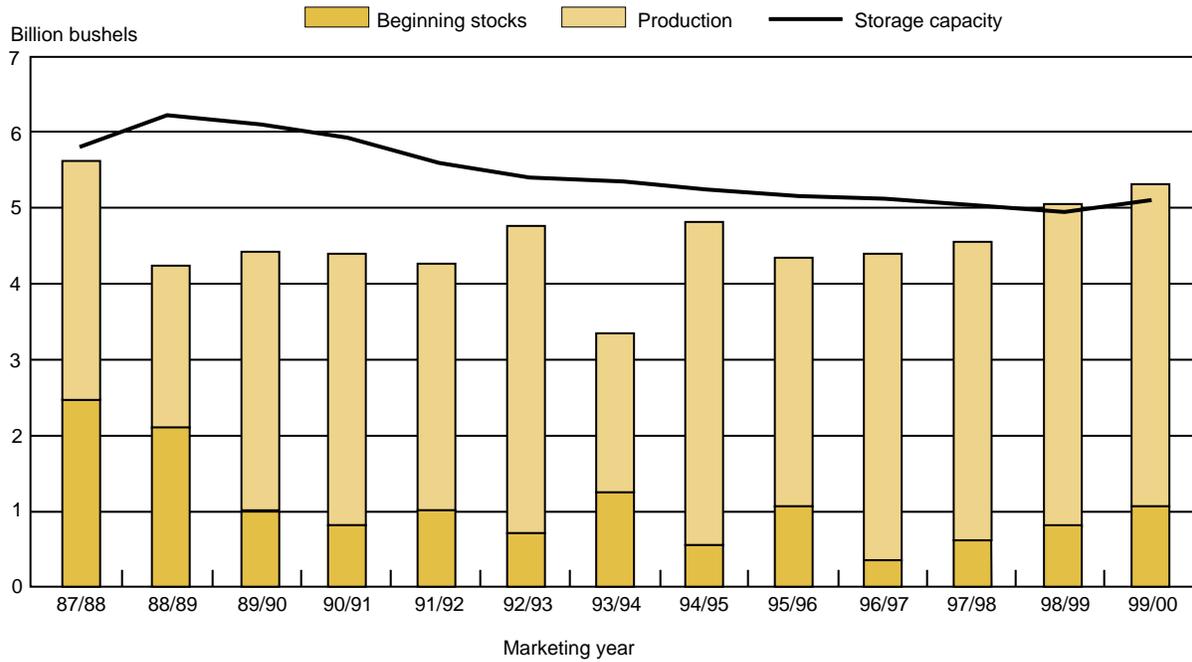
Figure 2—Eastern Corn Belt grain and soybean production, beginning stocks, and storage capacity, 1987/88-1999/2000



Note: Storage capacity is based on on-farm and off-farm capacity as of December 1 the preceding year. The marketing year for wheat, barley, oats, and rye begins June 1. The marketing year for corn, soybeans, and sorghum begins September 1. Beginning stocks for the September 1 crops are based on projections from the August 12, 1999, *World Agricultural Supply and Demand Estimates*. Regional dispositions for projected 1999/2000 corn, sorghum, and soybeans are estimated based on the June 1 regional distribution of stocks reported in the June 30, 1999, *Grain Stocks*. Production forecasts are from the August 12, 1999, *Crop Production* report.

Source: USDA-NASS, USDA-WAOB.

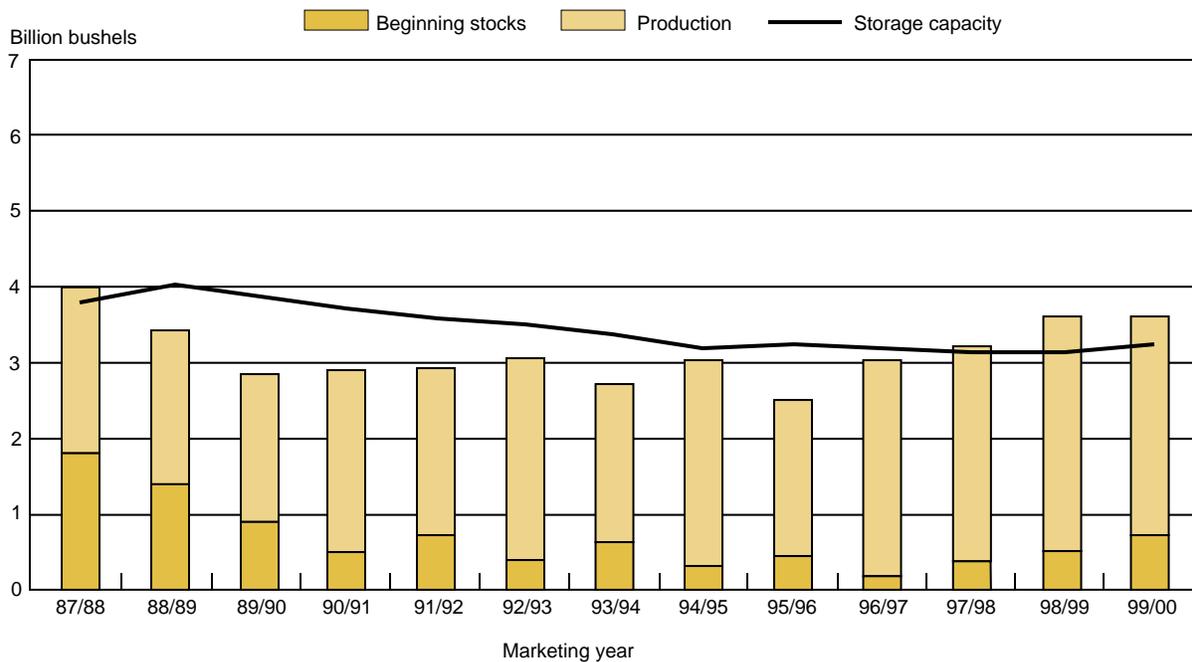
Figure 3—Western Corn Belt grain and soybean production, beginning stocks, and storage capacity, 1987/88-1999/2000



Note: Storage capacity is based on on-farm and off-farm capacity as of December 1 the preceding year. The marketing year for wheat, barley, oats, and rye begins June 1. The marketing year for corn, soybeans, and sorghum begins September 1. Beginning stocks for the September 1 crops are based on projections from the August 12, 1999, *World Agricultural Supply and Demand Estimates*. Regional dispositions for projected 1999/2000 corn, sorghum, and soybeans are estimated based on the June 1 regional distribution of stocks reported in the June 30, 1999, *Grain Stocks*. Production forecasts are from the August 12, 1999, *Crop Production* report.

Source: USDA-NASS, USDA-WAOB.

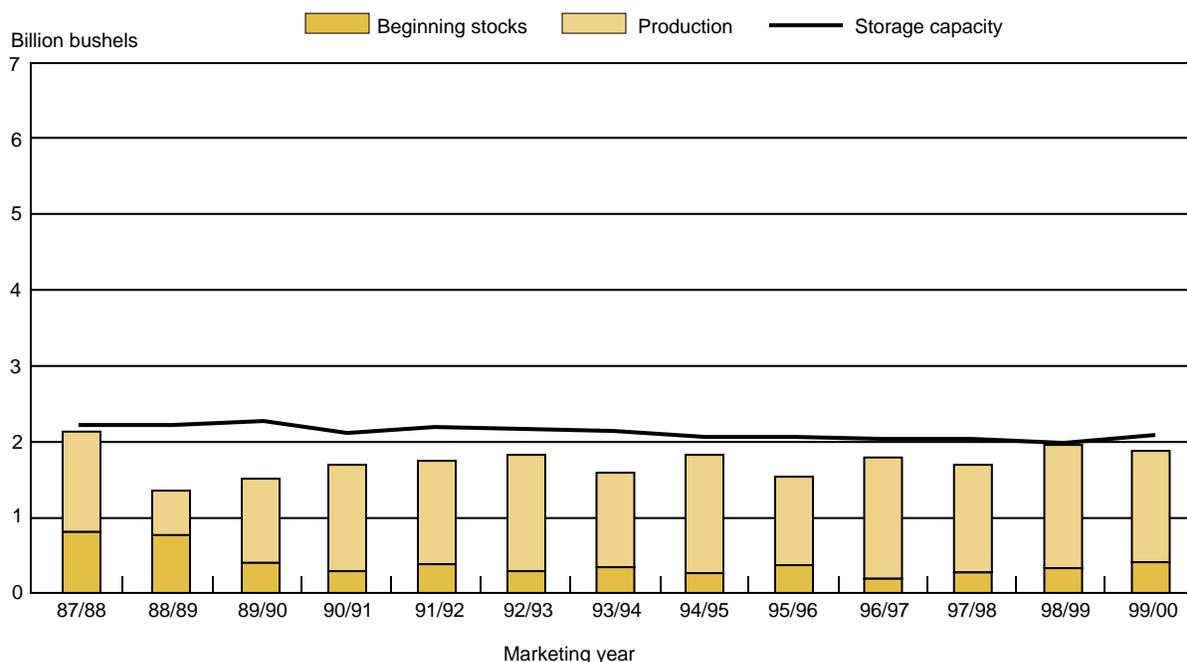
Figure 4—Central Plains grain and soybean production, beginning stocks, and storage capacity, 1987/88-1999/2000



Note: Storage capacity is based on on-farm and off-farm capacity as of December 1 the preceding year. The marketing year for wheat, barley, oats, and rye begins June 1. The marketing year for corn, soybeans, and sorghum begins September 1. Beginning stocks for the September 1 crops are based on projections from the August 12, 1999, *World Agricultural Supply and Demand Estimates*. Regional dispositions for projected 1999/2000 corn, sorghum, and soybeans are estimated based on the June 1 regional distribution of stocks reported in the June 30, 1999, *Grain Stocks*. Production forecasts are from the August 12, 1999, *Crop Production* report.

Source: USDA-NASS, USDA-WAOB.

Figure 5—Northern Plains grain and soybean production, beginning stocks, and storage capacity, 1987/88-1999/2000



Note: Storage capacity is based on on-farm and off-farm capacity as of December 1 the preceding year. The marketing year for wheat, barley, oats, and rye begins June 1. The marketing year for corn, soybeans, and sorghum begins September 1. Beginning stocks for the September 1 crops are based on projections from the August 12, 1999, *World Agricultural Supply and Demand Estimates*. Regional dispositions for projected 1999/2000 corn, sorghum, and soybeans are estimated based on the June 1 regional distribution of stocks reported in the June 30, 1999, *Grain Stocks*. Production forecasts are from the August 12, 1999, *Crop Production* report.

Source: USDA-NASS, USDA-WAOB.

Corn

Dry weather in parts of the Eastern Corn Belt since July have reduced the prospects for the 1999/2000 corn crop (September 1 marketing year). Even with reduced yields in this important part of the producing region, the 1999/2000 corn crop is still projected to be the third largest on record. Large beginning year stocks will more than offset lower production, leaving available supplies for 1999/2000 up modestly from 1998/99 and at their highest levels in more than a decade. Despite a very small year-to-year reduction in projected exports for 1999/2000, total use is projected to rise, exceeding 1998/99's forecast record level. Increased corn use will add to transportation demand, pushing rail and barge shipments above year-ago levels over the next several months. Even with the projected smaller crop and increases in use, ending stocks for 1999/2000 will increase for the fourth straight year. Large stocks will continue to put substantial pressure on storage capacity especially at harvest.

Supplies. USDA's August projections for the 1999/2000 corn crop put production at 9,561 million

bushels, down 2 percent, from 1998/99. With the current year's ending stocks estimated at 1,719 million bushels, up 31 percent from a year earlier, total supplies for the 1999/2000 marketing year are projected at 11,290 million bushels, up 2 percent from 1998/99. At this level, 1999/2000 available corn supplies would be the largest since 1987/88. Ending stocks for 1999/2000 are projected at 1,880 million bushels, up 9 percent from those estimated for the current year. If this projection holds, 1999/2000 will be the fourth consecutive year in which carryout stocks have increased.

The first survey-based production forecasts for corn were released in the August 12 *Crop Production* report. Corn production in 1999/2000 is forecast to be down in all the major producing areas including the Eastern and Western Corn Belts and the Central and Northern Plains (table 5). Despite the expected drop from 1998/99 production, forecast production in each of these regions is expected to exceed the 5-year averages. The largest year-to-year volume decline in production is expected in the Central Plains, where production is expected to drop 97 million bushels in 1999/2000, a 5-percent drop from 1998/99. Production in 1999/2000 is forecast to drop 50 million bushels, or 2 percent, in the

Table 5—U.S. corn production, 1994/95-1999/2000

Region	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	Percent of 1998/99	Percent of 5-yr. avg.
	<i>Million bushels</i>							
Northeast	268	228	295	232	254	191	75	75
Southeast	457	370	461	395	324	340	105	85
Delta	72	59	155	118	108	104	96	102
Eastern Corn Belt	3,823	2,701	2,994	3,260	3,336	3,286	98	102
Western Corn Belt	3,103	2,309	2,920	2,793	3,087	3,055	99	107
Southern Plains	269	245	238	280	228	291	128	115
Central Plains	1,573	1,191	1,663	1,650	1,814	1,717	95	109
Northern Plains	422	241	428	394	528	482	91	120
Pacific Northwest	28	28	34	30	33	42	128	140
West	36	30	45	55	50	52	104	121
United States	10,051	7,400	9,233	9,207	9,761	9,561	98	105

Note: 1999 production forecast is from the August 12, 1999, *Crop Production* report.
Source: USDA-NASS

Eastern Corn Belt; 46 million bushels, or 9 percent, in the Northern Plains; and 32 million bushels, or 1 percent, in the Western Corn Belt. The biggest regional increase in production is forecast for the Southern Plains, where 1999/2000 production is expected to be up 63 million bushels, or 28 percent, over 1998/99 (figure 6). The bulk of this increase is expected because of increases in the Texas crop, forecast to be up 49 million bushels over the drought-reduced 1998/99 crop. Increased production is also expected in the Southeast, where, despite a reduction in planted acreage for 1999/2000, production is expected to increase 16 million bushels, or 5 percent over 1998/99. The increase in local supplies of corn in the feed-deficit Southeast will help poultry and hog feeders meet at least part of their near-term feeding needs. These feeders are predominantly rail receivers who rely extensively on rail-shipped corn from Ohio, Indiana, Michigan, and east-central Illinois. Larger local supplies will help them deal with the service problems that have slowed rail operations on CSX Transportation (CSXT) and Norfolk Southern (NS) since their takeover of the Conrail system in June.

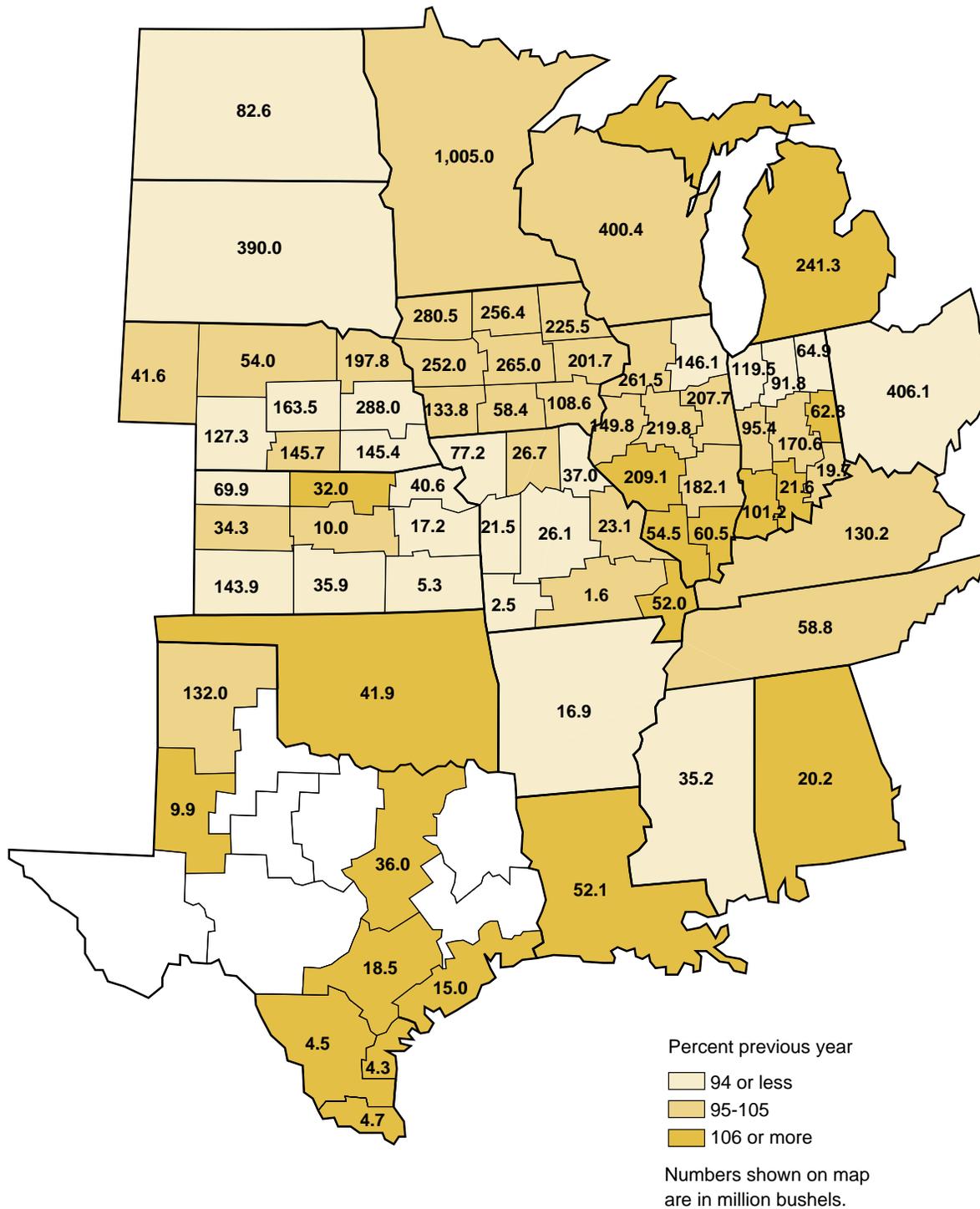
Prospects for the 1999/2000 corn crop have declined modestly since early July when hot weather and lack of rainfall in the Eastern Corn Belt, particularly in Ohio, Indiana, and central and southern Illinois, began to adversely affect these areas' crops. The band of dry weather that stretched along the Ohio River Valley in the Eastern Corn Belt also pushed into Missouri, substantially reducing prospects for that State's corn crop. Adequate moisture levels in much of the rest of the country have kept prospects for corn production outside the drought-affected area relatively high with increased

yields expected in Iowa, Wisconsin, Michigan, and throughout most of the South.

The corn crop is maturing ahead of last year and the 5-year average. As of August 22, 42 percent was reported as dented, up from 36 percent last year and the 5-year average of 25 percent. In the Eastern Corn Belt, the crop is running ahead of last year and the 5-year average. In the western corn States, this year's crop is running ahead of the 5-year average and, with the exceptions of Minnesota and Nebraska, ahead of last year at this time.

Use. Total corn use for the 1999/2000 marketing year is projected to remain relatively flat at 9,410 million bushels, up just 40 million bushels from that estimated for 1998/99. Even so, total corn use in 1999/2000 would be a record, surpassing the record use currently projected for 1998/99. Domestic corn use for 1999/2000 is projected up a modest 1 percent, or 65 million bushels, over 1998/99. At 7,485 million bushels, domestic use in 1999/2000 would again set a record. The increase in domestic use is expected as the result of a 4-percent projected increase in processing use for corn. Feed and residual use for 1999/2000 is expected to remain at the 1998/99 level. Export use in 1999/2000 is projected to drop 1 percent from that for 1998/99. This small year-to-year drop in 1999/2000 exports is the result of recent increases in 1998/99 corn exports. The hot, dry conditions in the Southern and Eastern Corn Belt regions and over much of the Midwest in July raised prices, bringing China back into the world export market. This suggests the potential for additional downward pressure on U.S. corn exports should prices rise even higher.

Figure 6—U.S. 1999/2000 corn production forecast for selected States/districts, August 1, 1999



Source: USDA-NASS

U.S. corn exports have been running well above year-ago levels for several months. Export corn inspections for January-July were up 40 percent over those for the same months in 1998. Inspections for June-July were up 54 percent over those during the same 2 months last year. Stronger corn exports have kept barge demand on the Mississippi River system running ahead of year-ago levels. Despite slowdowns at some key locks as the result of maintenance and repairs, barge volumes have remained high all through the summer. Ocean freight rates from the Gulf to the Far East have moved more in line with historical levels in the past few weeks, increasing the freight spread between the Gulf and the PNW. This has added to rail demand in the corridors connecting the western corn-growing areas to the PNW. Export inspections of corn at PNW facilities are up 39 percent for January-July of 1999, compared to the same months in 1998. Although the highest monthly inspection numbers for corn at the PNW since January were in March, inspections for June-July are up nearly fivefold over the same months last year. June-July 1998 inspections were reported at 10 million bushels. This year's June-July inspections were 47 million bushels.

Outstanding export sales continue to show strong export demand for corn during the remainder of the 1998/99 marketing year. Outstanding export sales (sold but unshipped) of corn for the current and next marketing years totaled 368.9 million bushels as of August 19, up 22 percent from last year at this time. Accumulated sales for the 1998/99 marketing year were reported at 1,872.5 million bushels as of August 18. This is up 33 percent from the same week last year. Despite the marketing year in which they are being reported, some of the current marketing year's sales are expected to be shipped after the beginning of the new marketing year in September. Outstanding sales for the 1999/2000 marketing year have also increased substantially in recent weeks, totaling 226.2 million bushels as of August 18. This is up 8 percent from last year at this time.

Carrying incentives built into the futures market prices for corn have increased in recent weeks, signaling the market to store corn. Prices for March corn on the Chicago Board of Trade were 24.5 cents per bushel above September prices (4.1 cents per bushel per month) on August 25. With the interest cost to carry corn at 1.5 cents per bushel per month, the market is signaling to store and hold grain. The spread between the September and March contracts for the same week last year was 22.75 cents. With large stocks and incentives to hold more grain, storage capacity will be

extremely tight in many parts of the country during the fall months and moving into early winter. Increasing price spreads between contract months and weaker cash prices relative to futures prices (basis) may be necessary to ration available storage capacity. Stronger incentives to hold grain also suggest that demand for corn transportation will decline after the fall harvest period.

Soybeans

High temperatures and low moisture levels, particularly in the Eastern Corn Belt and parts of the upper Delta regions, have lowered prospects for the 1999/2000 soybean crop since early July (September 1 marketing year). Despite recent drops in projected production, the 1999/2000 crop is still projected to set a record. Record production and the largest beginning stocks in more than a decade are projected to leave available soybean supplies for 1999/2000 at their highest level ever. Total use for 1999/2000 is also projected to set a record because of record crushing demand and the highest exports since 1981/82. Higher use will add to grain transportation demand, particularly barge demand, over the coming months. Even with record use, production will exceed demand, leaving carryout stocks for 1999/2000 at their highest level ever. Large soybean stocks will further add to storage demand in an already tight storage market.

Supplies. August production projections put the 1999/2000 soybean crop at a record 2,870 million bushels, up 4 percent from the previous record in 1998/99. Increased soybean use during the past few months has lowered expected carry-in to 385 million bushels. Despite this, beginning stocks for the 1999/2000 marketing year will be up 93 percent from the previous year and at their highest level since 1987/88. Total supplies for 1999/2000 will be up for the fourth straight year at a record 3,259 million bushels, an increase of 10 percent over 1998/99. Even with expected increases in soybean use, 1999/2000 ending stocks are projected to increase by 40 percent to 540 million bushels, the largest soybean carryover ever.

The first survey-based production forecasts for the 1999/2000 soybean crop show production up in every region except the Northeast and Southeast (table 6). The largest volume increases are forecast for the Western Corn Belt, Central Plains, and Delta. In the Western Corn Belt, production is forecast up 36 million bushels, or 4 percent; in the Central Plains, production is forecast up 34 million bushels, or 14 percent; and in the Delta, production is forecast up 28 million bushels,

Table 6—U.S. soybean production, 1994/95-1999/2000

Region	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	Percent of 1998/99	Percent of 5-yr. avg.
	<i>Million bushels</i>							
Northeast	46	29	41	40	44	34	77	85
Southeast	179	139	170	163	143	137	96	87
Delta	205	152	202	213	155	183	118	99
Eastern Corn Belt	911	822	839	965	1,022	1,030	101	113
Western Corn Belt	840	775	790	908	957	993	104	116
Southern Plains	16	12	14	21	12	22	183	146
Central Plains	208	152	209	231	240	274	114	132
Northern Plains	110	94	115	147	182	196	108	151
United States	2,515	2,174	2,380	2,689	2,757	2,870	104	115

Note: 1999 production forecast is from the August 12, 1999, *Crop Production* report.
Source: USDA-NASS

or 18 percent. The largest percentage increase in production is expected in the Southern Plains, where 1999/2000 production is forecast up 83 percent over 1998/99 for a year-to-year increase of 10 million bushels. Production increases are also forecast for the Northern Plains and Eastern Corn Belt, up 8 and 1 percent, respectively, over 1998/99 (figure 7).

The soybean crop is progressing at a pace slightly ahead of last year's crop and moderately ahead of the 5-year average. As of August 22, 90 percent of the crop was reported as setting pods, up from 88 percent for the same week last year. This compares to 83 percent for the 1994-98 average. The crop is running ahead of last year in the Eastern Corn Belt but behind last year in the Western Corn Belt and Central Plains.

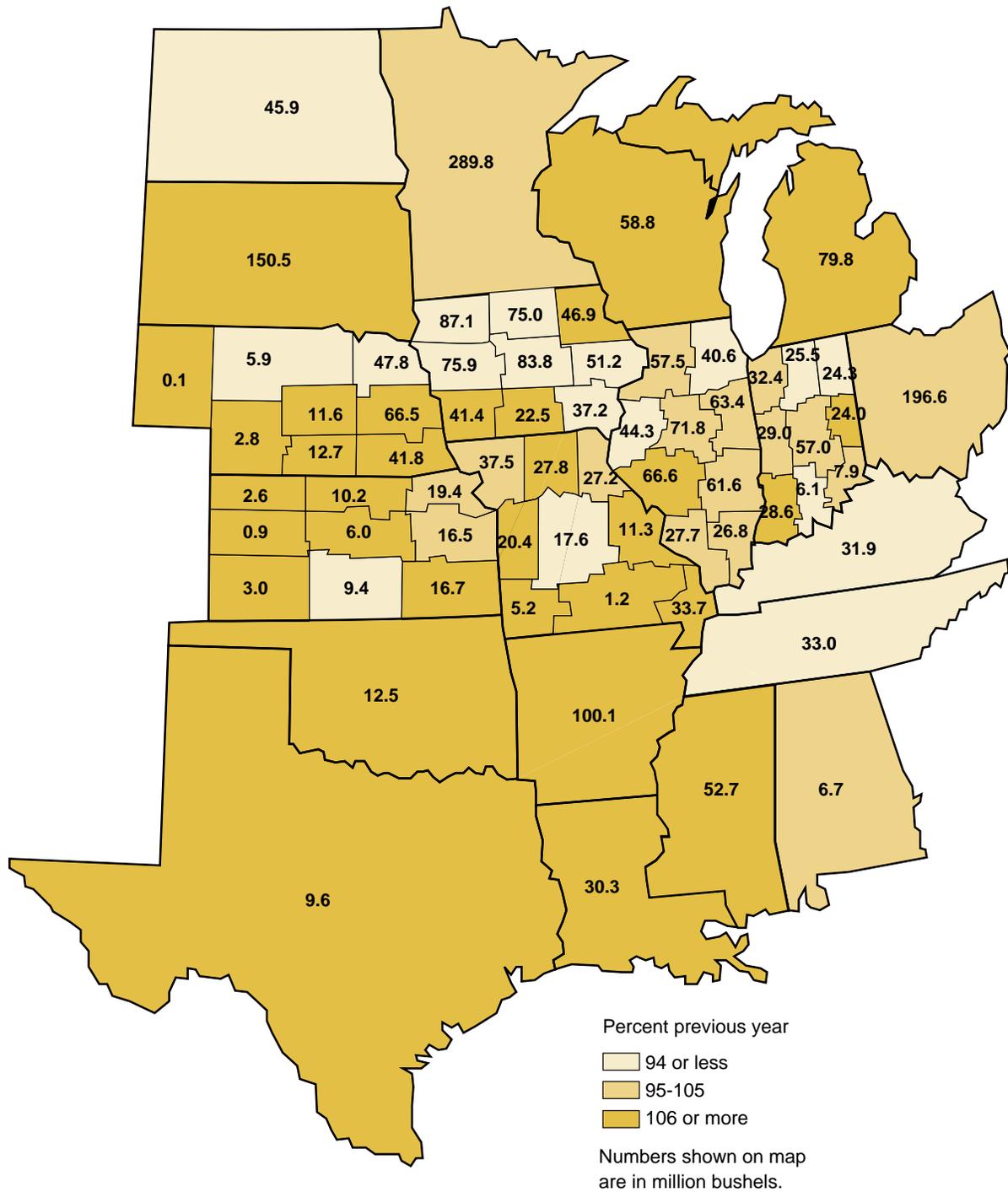
Use. August projections put 1999/2000 soybean use at a record 2,719 million bushels, up 6 percent from 1998/99. Domestic use is also projected to set a record at 1,804 million bushels, up 1 percent from the current year. Crushing demand for 1999/2000 is projected to set a record at 1,645 million bushels, up 4 percent from 1998/99. Stronger crushing demand in 1999/2000 is expected because of stronger export demand for soybean meal. Stronger exports of meal are expected in 1999/2000 as smaller crops in South America would increase demand for U.S. meal. This could quickly change if the condition of the U.S. crop continued to worsen and soybean prices increased. Export use for 1999/2000 is projected at 915 million bushels, up 16 percent from 1998/99 and at the highest level since 1981/82. Stronger crushing and export demand will

increase demand for soybean transportation in the coming months, especially for barge transportation.

Since March, soybean exports have outpaced those during the same months in 1998. For the January-July period, export inspections of soybeans are up 10 percent over the same months in 1998. For June-July, inspections are up 72 percent over the same 2 months last year. Export shipments appear likely to remain strong over the next few weeks. Outstanding export sales (sold but unshipped) for the 1998/99 marketing year totaled 45.6 million bushels as of August 18. This is up 28 percent over the same week last year. Outstanding export sales for the new crop year, starting September 1, have slowed since July. As of August 18, outstanding sales for the 1999/2000 marketing year were reported at 90.1 million bushels, down 22 percent from the same week last year. This is the third consecutive week that new crop outstanding sales have fallen behind year-ago levels. All through July new-crop outstanding sales outpaced year-ago levels.

Futures market prices for soybeans continue to provide price incentives to market soybeans, although the price incentive has weakened in recent weeks. Prices for March soybeans on the Chicago Board of Trade were 24 cents per bushel above September prices (4 cents per bushel per month) on August 25. The interest cost alone to carry soybeans forward from September to March would run around 19 cents per bushel (3.2 cents per bushel per month). Without increased price incentives to carry soybeans forward, old-crop and new-crop soybeans should keep moving into domestic and export use at a much stronger pace than a year ago.

Figure 7—U.S. 1999/2000 soybean production forecast for selected States/districts, August 1, 1999



Source: USDA-NASS

Wheat

August forecasts put 1999/2000 wheat production down from the preceding 2 years (June 1 marketing year). The largest beginning stocks in more than a decade, however, will make total wheat supplies for 1999/2000 just a fraction of a percent below those in 1998/99. Projected increases in wheat exports for the current marketing year will more than offset a small reduction in expected domestic use, leaving total use up modestly in 1999/2000. As a result of the drop in production and the expected increase in use, 1999/2000 ending stocks are projected to drop for the first time since 1995/96. Stronger export demand for wheat in recent months has helped pushed demand for rail transportation in the Western United States above year-ago levels. Projected increases in export wheat demand for 1999/2000 should keep wheat shipments above year-ago levels throughout the next several months.

Supplies. August production forecasts for all classes of wheat put the 1999/2000 wheat crop at 2,315 million bushels, down 9 percent from last year. With June 1 beginning stocks reported at 945 million bushels and imports for the marketing year projected at 105 million bushels, total supplies are projected at 3,365 million bushels, down 12 million bushels from 1998/99. At this level, however, available supplies will be at their second highest level since 1987/88, when total supplies reached 3,945 million bushels. Ending wheat stocks for the 1999/2000 marketing year are projected down 6 percent, or 61 million bushels, from last year's carry-out. This will be the first reduction in ending stocks since 1995/96. At 884 million bushels, projected ending

stocks for 1999/2000 would still be the second largest since 1987/88.

Wheat production for 1999/2000 is expected to be down from 1998/99 in the western regions and up in the eastern regions (table 7). The largest decreases are forecast for the Northern, Central, and Southern Plains, where production is forecast down 66, 65, and 61 million bushels, respectively. Production in the PNW is also down substantially with a forecast drop of 56 million bushels for 1999/2000. Small volume increases for 1999/2000 are forecast for the Eastern Corn Belt, Southeast, Delta, and Northeast. The largest percentage increases in winter wheat production for 1999/2000 are forecast for the Delta and Southeast regions. Large percentage increases in winter wheat production are also forecast for Minnesota and Iowa in the Western Corn Belt and for Michigan and the southern and southwestern parts of Illinois and Indiana in the Eastern Corn Belt (figure 8). A large increase in spring wheat production is forecast for Minnesota, but North and South Dakota spring wheat production is expected to be down for 1999/2000 (figure 9).

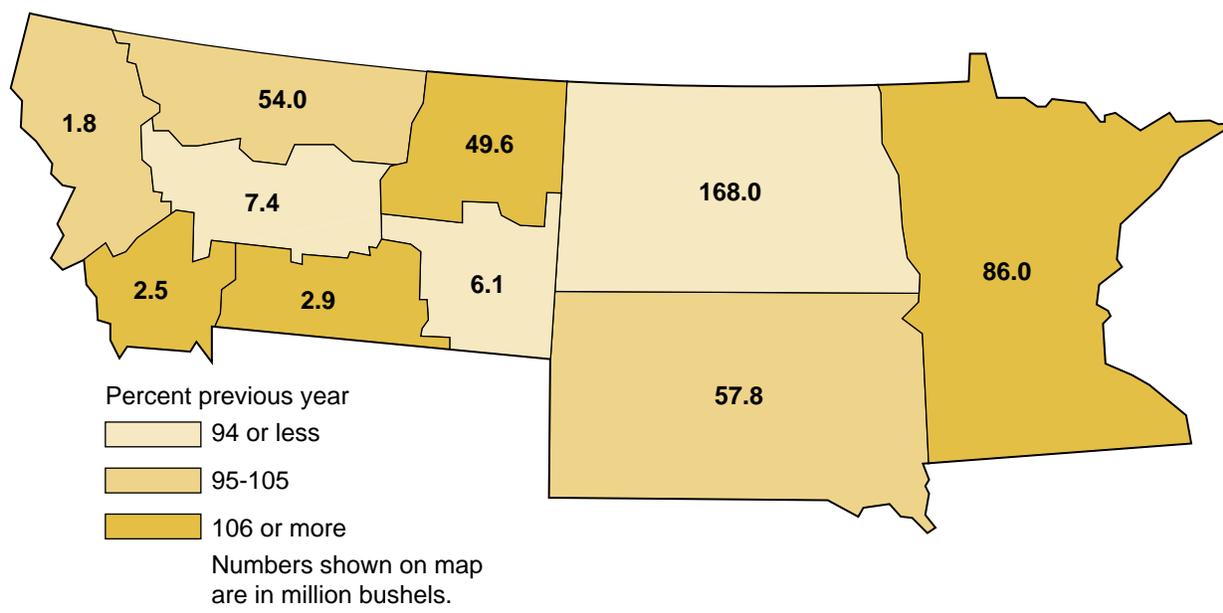
The average yield for winter wheat is projected at a record 47.4 bushels per acre, up from the previous record of 46.9 bushels in 1998/99. The 1999/2000 Hard Red Winter (HRW) wheat crop is forecast at 1,042 million bushels, down 12 percent from last year. Reports from the Kansas Department of Agriculture indicate that protein and test weights for Kansas wheat are down from last year. Protein content is also down from the 10-year average. Soft Red Winter (SRW) wheat production is forecast for 1999/2000 at 451 million

Table 7—U.S. wheat production, 1994/95-1999/99

Region	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000	Percent of 1998/99	Percent of 5-yr. avg.
	<i>Million bushels</i>							
Northeast	32	38	34	39	34	35	104	100
Southeast	128	110	117	125	101	110	109	95
Delta	49	56	84	51	57	62	110	105
Eastern Corn Belt	196	227	150	212	206	215	104	109
Western Corn Belt	124	121	157	137	139	136	98	101
Southern Plains	224	188	173	298	343	282	82	115
Central Plains	584	477	404	662	681	616	90	110
Northern Plains	627	595	715	556	607	541	89	87
Pacific Northwest	293	318	367	339	317	261	82	80
West	63	53	77	61	64	55	85	86
United States	2,321	2,183	2,277	2,481	2,550	2,315	91	98

Note: 1999 production forecast is from the August 12, 1999, *Crop Production* report.
Source: USDA-NASS

Figure 9—U.S. 1999/2000 spring wheat production forecast for selected States/districts, August 1, 1999



Source: USDA-NASS

bushels, up 2 percent from last year. White Winter wheat production is forecast down 24 percent from last year at 196 million bushels.

The August forecast for spring wheat other than durum puts the 1999/2000 other spring wheat crop at 512 million bushels, down 3 percent from 1998/99. Forecast spring wheat production has been lowered since the first survey-based numbers in July. Heavy rainfall kept some Northern Plains farmers from completing their planting this year before the June National Agricultural Statistics Service (NASS) interviews. NASS revisited selected North Dakota operations during July to assess planting changes, and these are incorporated into the August forecast.

Late planting has also slowed the progress of this year's crop. As of August 22, 42 percent of the spring wheat crop was harvested, compared to 76 percent for the same week in 1998 and a 5-year average of 48 percent.

Use. Wheat use for 1999/2000 is projected at 2,480 million bushels, up 2 percent from 1998/99. Domestic use of all classes of wheat is projected at 1,330 million bushels, down 4 percent from last year. Food use is projected up 1 percent for the current marketing year, at 915 million bushels. Feed and residual use is projected down 19 percent, at 325 million bushels. Low corn

prices are expected to make wheat less attractive for livestock feeders over the next several months. Export use is projected at 1,150 million bushels, up 10 percent from 1998/99.

Stronger wheat exports since March have increased demand for rail transportation in the Western United States. Export inspections of all wheat were up 18 percent for the first 7 months of calendar year 1999, compared to the same months last year. Inspections were up 22 percent for June-July, compared to 1998. Strong export demand for wheat at Texas Gulf ports has contributed to increased rail demand in the Southern and Central Plains. Export inspections at Texas Gulf ports were up 22 percent for January-July 1999, compared to the same period in 1998, and more than double their level for the same period in 1997. Export inspections have continued to be strong with July inspections the highest of any month so far in 1999. Texas Gulf inspections are up 6 percent for June-July 1999, compared to the same months in 1998, and up 38 percent from the same months in 1997.

Stronger export demand for HRW and Hard Red Spring (HRS) wheat at PNW ports has also increased demand for rail transportation from the Northern Plains in recent months. Export inspections for HRW and HRS wheat at PNW facilities were up 19 percent for January-July, compared to the same months last year.

Although HRW and HRS inspections at the PNW are down since May, June-July inspections were up 14 percent, compared with the same period last year. HRW and HRS wheat move predominantly by rail from the Northern Plains to export facilities in Oregon and Washington along the Columbia River.

Despite stronger exports in recent months, outstanding export sales (sold but unshipped) of all wheat for the 1999/2000 marketing year have fallen from a high of 140.7 million bushels on July 15 to 124.2 million bushels as of August 12. This is down 16 percent from the same week in 1998. Consistent with inspections, accumulated sales for this marketing year totaled 190.6 million bushels as of August 12, up 4 percent from the same week last year. Outstanding export sales of HRW wheat were up 9 percent from last year as of August 12. For the same week, outstanding export sales of SRW, HRS, and white wheat were down 15, 28, and 52 percent, respectively, from the same week last year.

Futures market prices include carrying incentives for wheat (out-month contracts trading at premiums to the nearby contracts). Prices for March HRW wheat were 29.5 cents per bushel (4.9 cents per bushel per month) above prices for September wheat on the Kansas City Board of Trade on August 18. On the same day, March SRW wheat on the Chicago Board of Trade was 31 cents above September (5.2 cents per bushel per month). March HRS contracts were 26 cents above September (4.3 cents per bushels per month) on the Minneapolis Grain Exchange at the market's close on August 18. With the interest cost to carry wheat running 2-2.4 cents per bushel per month, the market is signaling to store and carry wheat forward. Price incentives to hold wheat place additional pressure on storage capacity, especially as the fall crops begin to be harvested.

Transportation Situation

Ocean Freight Rates

Ocean freight rates for two of the key grain routes, U.S. Gulf to Japan and PNW to Japan, moved in opposite directions during July and August 1999. During July and August, rates from the Gulf averaged \$18.18 per mt, up 4 percent from second quarter 1999 (April-June) and up 36 percent from third quarter 1998 (July-September). Rates from the PNW averaged \$10.96 per mt during July and August, down 3 percent from second quarter 1999 but up 5 percent from third quarter 1998. Gulf and PNW rates, however, continue to be below the 5-year averages for this time of year. Gulf rates for the first 7 weeks of third quarter 1999 are down 21 percent from the 5-year average. So far for the third quarter, PNW rates are down 18 percent from the 5-year average (table 8).

The average ocean rate spread to Japan from the Gulf and PNW widened to \$7.22 per mt during July and August 1999. The July-August spread was up 17 percent from second quarter 1999 and more than double the spread in third quarter 1998 (figure 10). Since the first of July, the daily spread has increased 99 percent, from \$4.54 to \$9.03 per mt. A larger spread favors grain shipments from the PNW, while a smaller spread favors shipments from the Gulf.

July corn export inspections to Japan from the Gulf were up 28 percent, compared to July 1998. July inspections for corn exported from the PNW to Japan were up 130 percent over year-ago levels. Based on inspections, the PNW's share of corn exports to Japan during July was 14 percent, up from 6 percent during July 1998. The increase in share reflects a rate spread

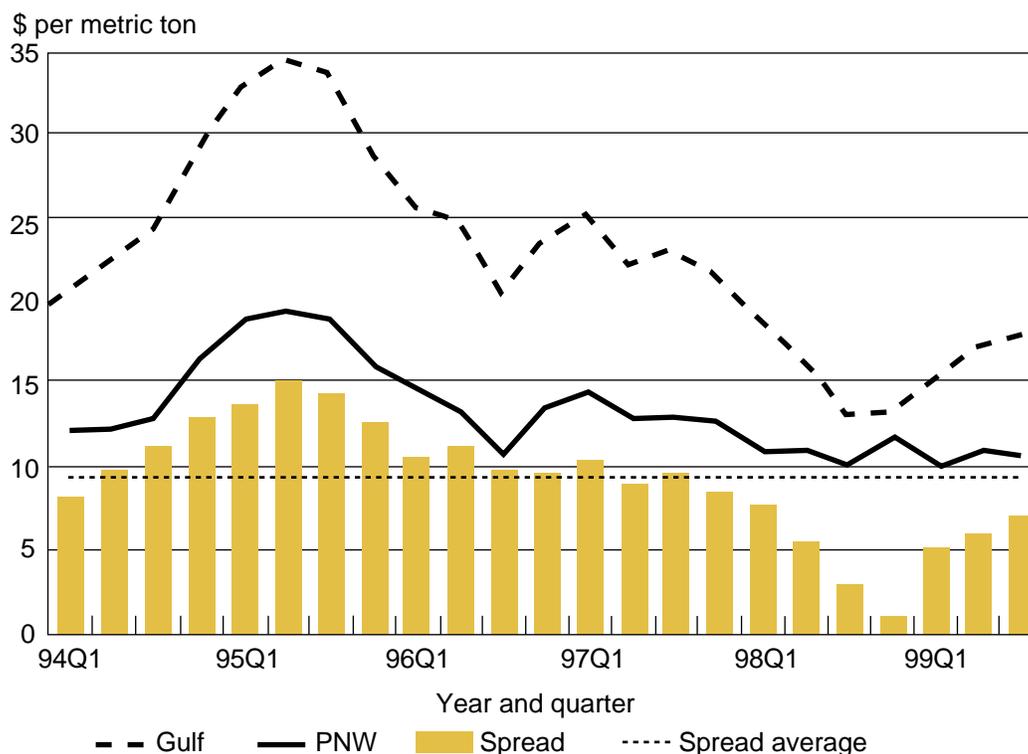
Table 8—Average daily ocean grain freight rates to Japan by quarter, 1994-99

Export range/ year	1st quarter (Jan-Mar)	2d quarter (Apr-Jun)	3d quarter (Jul-Sep)	4th quarter (Oct-Dec)	Annual (Jan-Dec)
<i>Dollars per metric ton</i>					
Gulf					
1994	20.59	22.31	24.40	29.54	24.21
1995	32.96	34.61	33.84	29.19	32.65
1996	25.91	24.93	20.58	23.78	23.80
1997	25.47	22.31	23.23	21.72	23.18
1998	18.95	16.85	13.41	13.65	15.71
1999	15.65	17.47	18.18		17.10
5-yr avg.	24.78	24.20	23.09	23.58	23.91
Pacific Northwest					
1994	12.32	12.32	12.95	16.35	13.49
1995	19.00	19.49	19.16	16.30	18.49
1996	15.04	13.52	10.79	13.85	13.30
1997	14.72	13.09	13.25	13.06	13.53
1998	11.08	11.31	10.41	12.20	11.25
1999	10.18	11.32	10.96		10.82
5-yr avg.	14.43	13.95	13.31	14.35	14.01
Spread					
1994	8.27	9.99	11.45	13.19	10.72
1995	13.96	15.12	14.68	12.89	14.16
1996	10.87	11.41	9.79	9.93	10.50
1997	10.75	9.22	9.98	8.66	9.65
1998	7.87	5.54	3.00	1.45	4.47
1999	5.47	6.15	7.22		6.28
5-yr avg.	10.34	10.26	9.78	9.22	9.90

Notes: Spread is based on the Gulf minus Pacific Northwest rates. 3d quarter 1999 rates are based on those reported through August 25, 1999.

Source: *Journal of Commerce*

Figure 10—Ocean grain freight rates to Japan, Gulf vs. Pacific Northwest, 1994-99



Notes: Spread is based on the Gulf minus Pacific Northwest rates. 3d quarter 1999 rates are based on those reported through August 25, 1999.
Source: *Journal of Commerce*

which has become increasingly favorable to the PNW since March.

Barge

Barge grain shipments continue to show significant increases, compared to last year. During the first 5 weeks of third quarter 1999 (July-September), an average 40.3 million bushels of grain and oilseeds were shipped on the Mississippi River per week. This is a 33-percent increase from last year's third quarter and a 30-percent increase over the 5-year average (table 9).³ At this pace, annual barge movements for 1999 could approach levels that have not been reached since 1995. Current traffic disruptions on the Mississippi River, however, may have an adverse effect on barge shipments during the next few weeks.

Starting in late July, barge traffic on the Upper Mississippi River began to be delayed by lock repairs. Locks and Dam (L&D) No. 27, the last lock on the Mississippi River, had its main chamber closed for about a week for the replacement of lift gate chains. During the main chamber closure, traffic continued through L&D 27's smaller auxiliary chamber; however, barges had to wait days instead of hours to transit the lock. After the reopening of the main chamber at L&D 27, the waiting backlog of barges quickly transited the lock, and traffic resumed at a normal pace.

Congestion problems continue to slow barge traffic. On August 6, the main chamber at Melvin Price (MP) L&D, located in Alton, IL (about 15 miles upstream from L&D 27), was closed to repair damages caused by a tow accident. Repairs are expected to take about a month. Traffic will continue through the smaller 600-foot auxiliary chamber, which forces a typical 15-tow barge to be separated into two sections before transiting the lock. Unlike L&D 27, MP's auxiliary chamber has a longer guidewall, which allows the first cut of barges coming out of a double lockage to be pulled to a better position for the eventual reassembling of the barges. As

³ Grain barge shipments are monitored by USDA from specially prepared lock reports provided by the U.S. Army Corps of Engineers. The collective data from Mississippi River Locks 27, Ohio River Locks 52, and Arkansas Norrell Lock are considered to be the total volume of barged grain since each lock is the last one on its respective river. A typical covered grain barge is 195 feet long by 35 feet wide with a 1,500-ton or 52,500-bushel capacity.

Table 9—Average weekly barge grain shipments by quarter, 1994-99

Export range/ year	1st quarter (Jan-Mar)	2d quarter (Apr-Jun)	3d quarter (Jul-Sep)	4th quarter (Oct-Dec)	Annual (Jan-Dec)
	- Thousand bushels -				
1994	24,521	25,406	29,699	38,083	29,427
1995	32,097	28,752	40,706	44,462	36,504
1996	29,971	35,459	25,811	39,847	32,772
1997	26,383	27,024	28,138	39,864	30,352
1998	25,932	27,198	30,391	37,545	30,267
1999	29,074	38,105	40,331		
5-yr. avg.	27,781	28,768	30,949	39,960	31,864

Notes: Data for 3d quarter 1999 are based on shipments through Aug 7, 1999. All averages are based on shipments through Mississippi L&D 27, Ohio L&D 52, and Norrell L&D on the Arkansas River.

Source: U.S. Army Corps of Engineers

a result of the longer guidewall, delays at MP should not be as long at those experienced at L&D 27 during the main chamber repairs there. As of mid-August, the MP repair work was reported to be on schedule.

For the first 6 weeks of third quarter 1999, spot market barge rates for grain shipped from Minneapolis-St. Paul to Mississippi River Gulf ports averaged 283 percent of tariff (table 10). Barge rates are quoted in terms of differentials from barge tariff benchmarks.⁴ The tariff rate from Minneapolis-St. Paul to the Gulf is \$6.19 per ton; therefore, the spot market rate quoted is 2.83 times \$6.19, or \$17.52 per ton. The Minneapolis-St. Paul rates for the beginning of the third quarter are 17 percent higher than third quarter 1998 and 30 percent higher than the 5-year average for third quarter rates. Barge rates for grain shipped from St. Louis, MO, to the Gulf were 165 percent of tariff during the first 6 weeks of third quarter 1999. This represents an 18-percent drop over third quarter 1998; however, third quarter 1998 had unusually high barge rates caused by increased demand for upbound movements of nongrain commodities. The current St. Louis barge rates are fairly typical of rates this time of year.

Barge companies offer freight at spot market rates for the current week, 1 month out, and 3 months out. September 1999 barge rates (1 month out) are being

quoted at 316 and 226 percent of tariff for Minneapolis-St. Paul and St. Louis, respectively. During September and October, barge rates typically peak, while November rates typically show a marked decrease over the previous months. Current 3-month-out rates for November 1999 are being quoted at 311 percent of tariff for Minneapolis-St. Paul and 170 percent of tariff for St. Louis. The very small drop in November, compared to September rates for Minneapolis-St. Paul, is an indication that grain shippers expect continued strong demand for barge capacity on the Upper Mississippi River even in the final weeks before the winter closing.

Rail

Eastern Railroads

As the Conrail transition continues into its fourth month, issues relating to service reliability remain. Critical system performance measures monitored by the Surface Transportation Board's (Board) Office of Compliance and Enforcement, however, show overall improvement since the operational takeover began on June 1. Some shippers are receiving better service, while others are still suffering delays. Shippers of time-sensitive traffic, e.g. the United Parcel Service, the U.S. Postal Service, the auto industry, and intermodal shippers, suggest that their service expectations are still not being met. Other traffic, usually not considered time-sensitive, such as coal, grain, and general merchandise, has become more sensitive to service delays because of heavy shipping volumes. Additional reporting required by the Board regarding blocked sidings and mainlines and trains delayed for cause (shortages of power and crews or congestion) demonstrates that two of the most

⁴ The benchmarks are from the Bulk Grain and Grain Products Freight Tariff No. 7, which was issued by the Waterways Freight Bureau (WFB) of the Interstate Commerce Commission (ICC). In 1976, the United States Department of Justice entered into an agreement with the ICC and made Tariff No. 7 no longer applicable. Today, the WFB no longer exists, and the ICC has become the Surface Transportation Board of the U.S. Department of Transportation. However, the barge industry continues to use the benchmarks as rate units.

Table 10—Average weekly barge rates by quarter, 1994-99

Region/year	1st quarter (Jan-Mar)	2d quarter (Apr-Jun)	3d quarter (Jul-Sep)	4th quarter (Oct-Dec)
	<i>Percent of tariff</i>			
Minneapolis-St. Paul to New Orleans: (tariff = \$6.19 per ton)				
1994	152	129	171	265
1995	253	221	347	347
1996	no rates	180	151	236
1997	165	146	179	249
1998	164	166	241	325
1999	213	182	288	
5-yr. avg.	184	168	217	284
St. Louis to New Orleans: (tariff = \$3.99 per ton)				
1994	96	85	140	214
1995	205	155	263	197
1996	180	99	106	148
1997	118	90	122	140
1998	93	106	199	189
1999	123	107	164	
5-yr. avg.	139	106	165	178

Notes: Data for 3d quarter 1999 are based on rates reported through August 11, 1999.

Source: USDA-AMS

critical resources, power and crews, continue to be strained, affecting train cycle times. To address these service issues, both CSXT and NS continue to make changes to their service design plans based on the way the former Conrail traffic flows are evolving between them.

Shared Assets Area (SAA) performance has been a focus of both the Board and the parent companies, and system performance measures suggest generally that SAA operations are improving. While trains continue to be delayed for power and crews, cars on hand, cars handled, and dwell times are improving for the SAA's and, most significantly, for the largest SAA facility, Northern New Jersey. Elsewhere, yard and terminal performance, as judged by the increasing number of cars handled and the decreasing dwell time, also is improving.

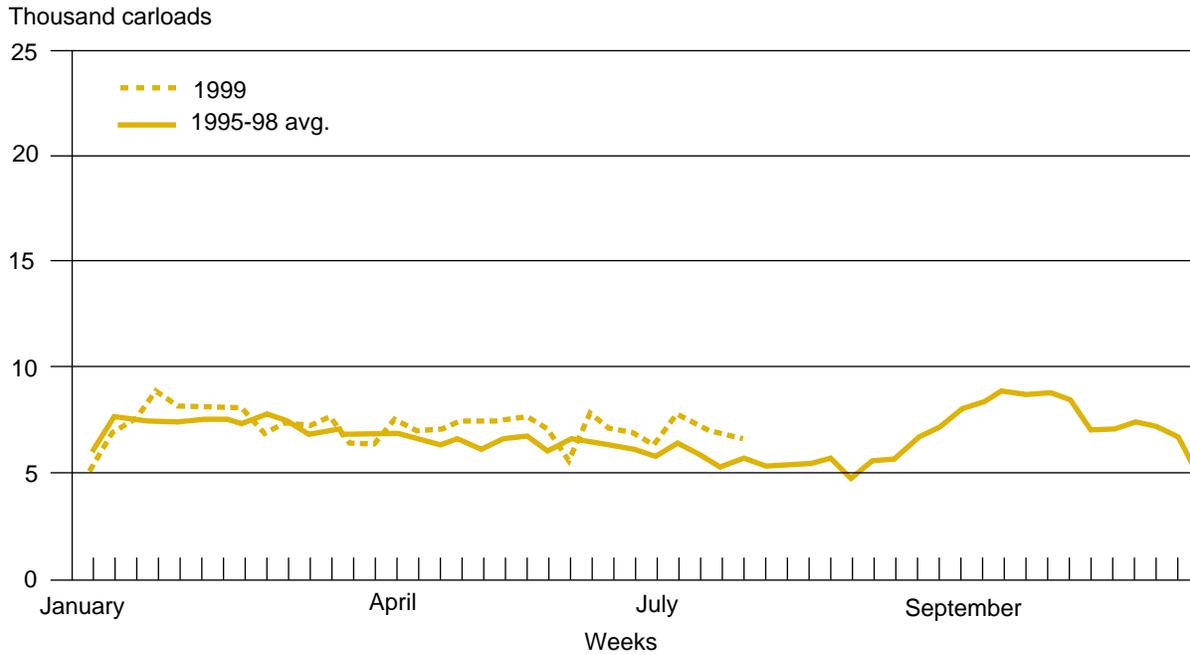
The objective now is to continue the service design changes, infrastructure improvements, information technology cut-overs, and additions to employee and equipment resources. National economic trends suggest continued strong demand for rail service with substantially increased business levels in the fall for nearly all

commodity groups. The fall period will be a test of both the CSXT and the NS systems.

Although weekly grain shipments on eastern railroads continue to keep pace with year-ago levels, operating problems associated with the Conrail takeover have increased the volatility of traffic in recent weeks (figure 11). While this has complicated the logistical problems faced by grain receivers in the East, things should go more smoothly in the weeks ahead. August and September are typically the slowest months for grain traffic on the eastern railroads because feeders in the Southeast can use locally grown wheat and corn to augment rail-delivered Eastern Corn Belt grains. This period of reduced grain traffic should help both CSXT and NS satisfy unfilled grain demand and prepare for the busiest grain shipping season, which typically begins in October.

CSX Transportation. CSXT continues to struggle in the post-Conrail period. Of particular concern, may be the fact that the number of cars on CSXT lines continues to increase (table 11). Taken together, CSXT and NS grain traffic has lagged behind its year-ago levels since the takeover of Conrail, although traffic has

Figure 11—Grain traffic on eastern railroads, 1995-98 average and 1999 to date



Notes: Eastern railroads include CSX Transportation, Illinois Central, and Norfolk Southern.

Source: Association of American Railroads.

Table 11—Freight cars on line, January-July 1999

Car type/railroad	January	February	March	April	May	June	July
	<i>Number of railcars</i>						
All freight cars:							
CSX Transportation	199,529	205,218	203,147	201,876	201,120	244,923	248,123
Norfolk Southern	149,170	150,706	150,090	152,363	151,115	238,792	240,796
Burlington Northern Santa Fe	211,231	210,575	208,100	209,069	207,278	203,781	206,609
Kansas City Southern Railway	33,692	32,907	32,398	29,126	30,626	31,151	31,369
Union Pacific	316,349	315,945	310,389	310,389	312,357	306,353	310,458
All railroads	909,971	915,351	904,124	902,823	902,496	1,025,000	1,037,355
Covered hoppers:							
CSX Transportation	48,864	51,400	51,563	50,667	49,304	57,535	58,458
Norfolk Southern	31,225	31,864	31,183	31,468	31,237	45,725	46,959
Burlington Northern Santa Fe	64,291	64,045	63,397	63,672	62,771	60,498	61,955
Kansas City Southern Railway	6,939	9,113	9,281	8,618	8,811	9,079	9,152
Union Pacific	103,434	102,190	101,177	99,982	98,214	96,154	96,739
All railroads	265,982	269,542	267,236	264,982	250,337	268,991	273,263

Notes: The number of cars on line is a weekly average of the inventory of railroad and privately owned freight cars on each railroad's system. For information and specific definitions for individual railroads, see www.railroadpm.org. Because data on cars on line include those Conrail system cars absorbed by CSX Transportation (CSXT) and Norfolk Southern (NS) on June 1, comparisons may not be truly reflective of changes on the original portions of the CSXT and NS systems.

Source: Association of American Railroads, *Railroad Performance Measures*

strengthened in recent weeks. CSXT grain trains are still running at a slower than ideal pace, but this drop in velocity has not been as troublesome as might have been expected because CSXT has significantly increased its covered hopper fleet over the past year (tables 12 and 13).

Norfolk Southern. Like CSXT, NS carloadings have bounced around since the Conrail takeover. By all accounts, initial service problems on NS were more severe than on CSXT, but its recovery has been more rapid. After an alarming buildup of cars-on-line in early June, NS has steadily reduced the number of cars on its system, although yard fluidity remains a concern (table 14).

Illinois Central. The August *Grain Transportation Prospects* suggested that Illinois Central (IC) should enjoy strong agricultural traffic in the weeks ahead, due to delays resulting from repairs on L&D 27 and MP. During the last week of July and the first week of August, IC traffic was up 25 percent from year-ago levels. Lock repairs continue to affect barge traffic at MP, so IC traffic may remain stronger than normal for a few weeks more during the preharvest period. Typically, IC moves into a somewhat slower period in late August and September, before ramping up for October and the fall harvest.

Perhaps the most significant aspect of IC operations is the successful merging of its rail system with that of the Canadian National (CN). The IC/CN merger was effective in July and, as expected, given the end-to-end nature of the merger, customer service appears not to have been affected.

Western Railroads

The western railroads continue to move significant quantities of grain (figure 12). Throughout 1999, the western railroads have easily handled the traffic increases that normally occur in July and August with the wheat harvest. In addition, higher export demand, particularly for exports from PNW ports, has increased westbound movements.

Secondary market values for fall car service guarantees, held by shippers who have their own grain cars pooled into the UP grain fleet, have risen substantially since mid-July. As of mid-August, UP car service guarantees were selling at \$198 per car for October, \$103 per car for November, and \$46 per car for December. As of mid-July, secondary market car service guarantees were at \$66 per car for October and \$52 per car for

November. Mid-August values are down this year, compared to last year when October and November guarantees were reported at \$236 and \$161 per car, respectively.

Premiums in the secondary market for Burlington Northern Santa Fe (BNSF) shipper-guaranteed freight are also up in recent weeks for October but down for November and December. Mid-August values for BNSF shipper car guarantees were \$96 per car for October, \$32 per car for November, and \$11 per car for December. Mid-July values for October and November guarantees were \$47 and \$36 per car, respectively. As with the car service guarantee prices on UP, BNSF fall service guarantees are also down this year. Mid-August 1998 values were \$190 per car for October and \$172 per car for November.

The substantial drop in value for car service guarantees from October to December is a strong indication that shippers are expecting rail demand this fall to follow a fairly typical seasonal pattern. Normally the fall shipping season for rail peaks in October and early November. Secondary values for this fall's car service guarantees are following that pattern.

The value of service guarantees in the secondary market are influenced, not only by demand, but also by the amount of railcar capacity BNSF and UP offer under their own service guarantee programs in their own equipment. Both railroads have allocated additional car capacity for this fall, at least in part explaining the year-to-year decline in values for shipper car service guarantees. As of August 1, UP reported it would be offering 5,400 cars each month during the September-December period under its Grain Car Allocation System (GCAS). This compares to 5,000 cars for the same months in 1998. Of the guaranteed GCAS cars offered for the fall, 92 percent of September, 14 percent of October and November, and 6 percent of December cars were sold as of August 1. For September, BNSF offered 9,500 cars under its guaranteed service program, known as the Certificate of Transportation (COT) program. This is up substantially from last September when BNSF offered 6,508 COT cars. BNSF's September cars were sold out by early August this year. BNSF reports it will offer 12,175 cars each month in October, November, and December. This compares with 5,645 cars last October, 5,205 cars last November, and 5,350 cars last December. As of August 18, BNSF reported it had sold 83 percent of its September COT cars, 59 percent of its November COT cars, and 30 percent of its December COT cars.

Table 12—Average train speed, January-July 1999

Train type/railroad	January	February	March	April	May	June	July
	<i>Miles per hour</i>						
All trains:							
CSX Transportation	18.4	17.9	17.7	18.9	19.2	18.7	18.7
Norfolk Southern	16.1	20.6	20.8	18.8	20.2	18.4	18.3
Burlington Northern Santa Fe	23.4	24.5	24.9	24.9	24.9	24.8	24.8
Kansas City Southern Railway	23.0	23.6	23.3	23.2	22.6	22.3	22.5
Union Pacific	24.1	24.7	24.6	25.2	23.7	24.4	24.7
All railroads	21.3	22.4	22.4	22.6	22.3	21.7	21.7
Grain trains:							
CSX Transportation	17.3	18.2	18.2	17.6	18.5	16.8	17.0
Norfolk Southern	17.9	17.2	17.4	18.8	16.6	15.8	14.2
Burlington Northern Santa Fe	20.1	20.3	20.9	21.3	21.4	22.3	22.3
Kansas City Southern Railway	21.5	19.1	18.9	19.6	18.9	16.3	16.4
Union Pacific	21.9	22.4	22.8	23.4	24.6	25.0	23.7
All railroads	19.2	19.5	19.8	20.2	21.4	20.8	20.1

Notes: Average train speed is calculated by dividing train-miles by hours operated for the line-haul portion of the movement and excludes time spent in terminals (dwell time). For information and specific definitions for individual railroads, see www.railroadpm.org. Because data on train speeds include those portions of the Conrail system absorbed by CSX Transportation (CSXT) and Norfolk Southern (NS) on June 1, comparisons may not be truly reflective of changes on the original portions of the CSXT and NS systems.

Source: Association of American Railroads, *Railroad Performance Measures*

Table 13—Railcar fleets assigned to agricultural service by railroad, August 1997-99

Region/railroad	1997	1998	1999	Percent of 1998
	<i>Railcars</i>			
Eastern railroads				
CSX Transportation (CSXT)	4,300	4,900	5,300	108
Illinois Central (IC)	3,900	3,987	3,674	92
Norfolk Southern (NS)	6,101	6,041	6,101	101
Subtotal	14,301	14,928	15,075	101
Western railroads				
Burlington Northern Santa Fe (BNSF)	32,000	33,000	32,775	99
Canadian Pacific/SOO Line (CP/SOO)	6,600	7,963	7,200	90
Kansas City Southern (KCS)	3,000	3,500	3,609	103
Union Pacific (UP)	32,297	32,069	32,363	101
Subtotal	73,897	76,532	75,947	99
Total	88,198	91,460	91,022	100

Note: Includes air slide cars and covered hoppers with capacities of 4,750 and 5,150/5,160 cubic feet. CSX Transportation is projecting its peak fall (October-November) grain fleet at 6,500 jumbo covered hoppers.

Source: Surface Transportation Board

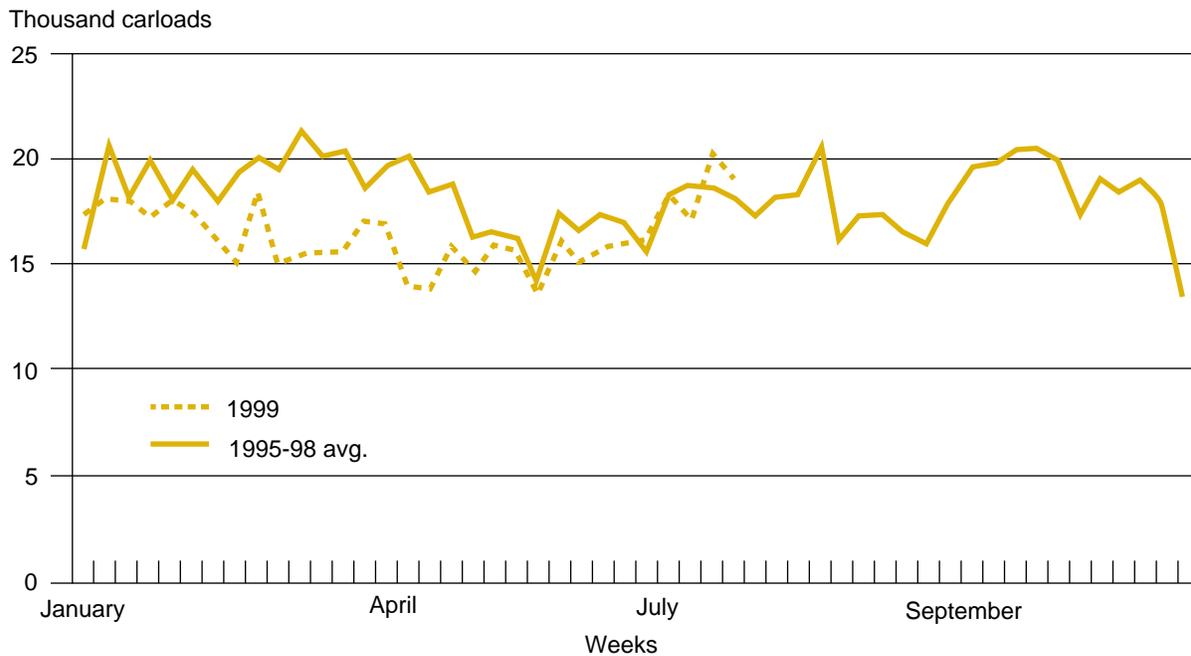
Table 14—Average dwell times for selected terminals by railroad, January-July 1999

Railroad/selected terminal/city and State	January	February	March	April	May	June	July
	<i>Hours</i>						
CSX Transportation:							
Cincinnati, OH	35.8	34.7	31.1	26.9	26.0	31.9	32.9
Corbin, KY	21.0	20.4	20.5	20.4	16.0	20.5	20.7
Hamlet, NC	32.7	32.4	30.9	32.8	27.0	28.1	30.6
Louisville, KY	42.1	44.0	36.0	32.5	32.4	32.6	34.5
Nashville, TN	34.8	41.8	39.1	34.7	32.9	36.5	38.4
Norfolk Southern:							
Chattanooga, TN	26.6	31.0	31.0	33.8	36.6	36.4	37.4
Columbus, OH	15.3	17.8	19.4	22.2	17.3	32.9	32.4
Knoxville, TN	30.4	32.4	27.7	31.4	33.7	36.7	37.8
Linwood, NC	26.9	30.5	30.2	37.8	32.5	29.5	34.7
Macon, GA	25.8	30.3	29.1	35.0	37.7	39.0	38.6
Burlington Northern Santa Fe:							
Barstow, CA	29.0	29.0	29.0	30.0	28.0	29.0	27.0
Fort Worth, TX	26.0	23.0	26.0	20.0	24.0	20.0	19.0
Houston, TX	14.0	12.0	14.0	15.0	15.0	16.0	15.0
Kansas City-Argentine, KS	30.0	26.0	25.0	26.0	26.0	27.0	27.0
Minn./St. Paul-Northtown, MN	33.0	28.0	30.0	25.0	27.0	27.0	26.0
Pasco, WA	25.0	24.0	24.0	23.0	23.0	23.0	22.0
Kansas City Southern Railway:							
Kansas City, KA	18.0	24.0	22.0	21.0	26.0	27.0	25.0
Shreveport, LA	34.0	35.0	35.0	36.0	37.0	36.0	38.0
Union Pacific:							
Fort Worth-Centennial, TX	39.9	33.8	37.3	32.3	29.4	35.9	29.6
Houston-Englewood, TX	41.2	31.9	32.0	30.7	34.4	36.3	40.5
Houston-Settegast, TX	38.7	35.5	34.4	29.9	32.7	36.1	33.6
Kansas City-Neff, MO	36.0	32.0	29.2	31.5	34.9	29.5	29.9
North Platte-East, NE	37.5	33.1	31.4	36.2	38.2	29.1	27.0
North Platte-West, NE	34.5	36.2	24.9	35.1	35.8	24.4	28.6
Roseville, CA	31.7	33.1	30.3	28.3	34.5	42.7	40.1

Notes: Dwell time is the total time, on average, that a car spends at a terminal location. A terminal can be a single or multiple yard facility. For information on additional terminals and specific definitions for individual railroads, see www.railroadpm.org.

Source: Association of American Railroads, *Railroad Performance Measures*

Figure 12—Grain traffic on western railroads, 1995-98 average and 1999 to date



Note: Western railroads include Burlington Northern Santa Fe, Kansas City Southern, and Union Pacific.
Source: Association of American Railroads.

Burlington Northern Santa Fe. BNSF grain trade is booming. During July, BNSF moved an average of 9,388 cars per week, up 20 percent from the average 7,827 cars loaded weekly in July 1998. To meet the higher export shipments off the PNW and the typical wheat-related upturn, BNSF has brought thousands of cars out of storage. On July 3, BNSF had 3,448 cars in storage, but by August 21, that number had fallen to 275. Despite these additions to its fleet size, BNSF past-due car orders—an important indicator of unfilled demand—have risen from 1,501 cars on July 6 to 4,601 on August 24. BNSF grain train speeds, however, remain very strong, averaging 22.3 miles per hour in July.

On a State-by-State basis, BNSF remains busy with wheat movements in Kansas. In addition to this important seasonal traffic, BNSF has been quite busy in

Minnesota and the Dakotas, where BNSF originates PNW-bound corn.

Union Pacific. UP has also been extremely busy in Kansas. Traffic is moving smoothly, with grain trains averaging 23.7 miles per hour in July. Comparisons with year-ago levels, which have been distorted by the 1997-98 service failure, should start conveying meaningful information in the next few weeks, reflecting UP's service recovery in September 1998.

Kansas City Southern Railway. Traffic on the Kansas City Southern (KCS) slowed in July, but looking at KCS's outstanding orders, September is likely to be a strong month.

Additional Sources of Information

More detailed information on grain and oilseed production and stocks is available from the National Agricultural Statistics Service in:

Crop Production,
<http://jan.mannlib.cornell.edu/reports/nassr/field/pcp-bb>

Grain Stocks,
<http://jan.mannlib.cornell.edu/reports/nassr/field/pgs-bb>

Small Grains Summary,
<http://jan.mannlib.cornell.edu/reports/nassr/field/pcp-bbs>

More detailed information on grain and oilseed supplies and use is available from the Economic Research Service in:

Feed Outlook,
<http://usda.mannlib.cornell.edu/reports/erssor/field/fds-bb>

Wheat Outlook,
<http://usda.mannlib.cornell.edu/reports/erssor/field/whs-bb>

Oil Crops Outlook,
<http://usda.mannlib.cornell.edu/reports/erssor/field/ocs-bb>

The latest and most detailed grain and oilseed supply and demand information is available from the World Agricultural Outlook Board in:

World Agricultural Supply and Demand Estimates,
<http://www.usda.gov/oce/waob/wasde/wasde.htm>

More detailed information on grain and oilseed exports, trade, and outstanding sales is available from the Foreign Agricultural Service in:

Grains: World Markets and Trade,
<http://www.fas.usda.gov/grain/circular/1998/98-08/graintoc.htm>

Oilseeds: World Markets and Trade,
<http://www.fas.usda.gov/oilseeds/circular/1998/98-08/toc.htm>

Export Sales, <http://www.fas.usda.gov/export-sales/esrd1.html>

For additional information on grain and rail transportation see:

USDA-AMS, *Grain Transportation*,
<http://www.ams.usda.gov/tmd/grain.htm>

U.S. Surface Transportation Board,
<http://www.stb.dot.gov>

Association of American Railroads, <http://www.aar.org>

Burlington Northern Santa Fe, <http://www.bnsf.com>

Canadian National Railway Company,
<http://www.cn.ca>

Canadian Pacific Railway Company, <http://www.cpr.ca>

CSX Transportation, <http://www.csx.com>

Kansas City Southern, <http://www.kcsi.com>

Norfolk Southern, <http://www.nscorp.com>

Union Pacific, <http://www.up.com>

The *Grain Transportation Propects* is available at the time of its release on the Internet at www.ams.usda.gov/tmd/mta/mta_special_reports.htm.